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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/760,141

01/16/2004

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FA/243A

7216

28596 7590 11/25/2009  
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EXAMINER

DESAI, ANISH P

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

11/25/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/760,141	<b>Applicant(s)</b> FARNWORTH, BRIAN	
	<b>Examiner</b> ANISH DESAI	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 1-26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-35, 37, 40-43, 46 and 47 is/are allowed.
- 6) ☒ Claim(s) 27-29, 36, 38, 39, 44 and 45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

***DETAILED ACTION***

1. Applicant's arguments in response to the Office action mailed on 02/18/09 have been fully considered.
2. Support for amended claims 36-37 is found in the specification as originally filed (see paragraph 0029 of PG Pub of this application).
3. The 35 USC Section 112-second paragraph rejections to claims 36-37 are withdrawn in view of applicant's amendment and response.
4. After reviewing applicant's response and the prior art as a whole, the 35 USC Section 103(a) rejections based on Garbuio (US 3,925,916) in view of Smith et al. (US 5,877,100) to claims 30-35, 37, 40-43, 46, and 47 are withdrawn.
5. Upon further consideration, the obviousness-type double patenting rejections over co-pending application SN 11/106,788 are withdrawn.

***Drawings***

6. The drawings are objected to because of the following reasons:
7. Figure 4 ("Average Temperatures in Ski Boots") does not label the X-axis.
8. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

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number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Allowable Subject Matter***

**9. Claims 30-35, 37, 40-43,46, and 47 are allowed based on the following reasons:**

10. The closest prior art to presently claimed invention is Garbuio (US 3,925,916) and Smith et al. (US 5,877,100).

11. Garbuio discloses a flexible insert for a boot (abstract), wherein the insert functions as a thermal insulator (column 1 lines 15-17). Smith discloses a particulate composition having improved thermal conductivity and insulation bodies having low thermal conductivity (abstract). However, neither Garbuio nor Smith teaches or suggests claim features "placing ***more than one section*** of the structure material in a

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gas impermeable envelope" (claim 30) and "sealing the envelope between sections of the structure material within the envelope to provide flexibility to the flat insulating structure for shaping" (claim 30).

12. As pointed out by applicant on page 11 of 08/13/09 amendment, Garbuio discloses only one elastomeric core portion (4a) in the gas impermeable envelope NOT both elements 4 and 4a as previously asserted by the Examiner. Additionally, Smith does not teach or suggest "placing **more than one section** of the structure material in a gas impermeable envelope" (claim 30) and "sealing the envelope between sections of the structure material within the envelope to provide flexibility to the flat insulating structure for shaping". It is submitted that, absent hindsight reasoning, there is no motivation to render obvious the aforementioned claim features. Accordingly, these claims are allowable over the prior art of record.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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13. **Claims 27-29, 36, 38-39, and 44-45, are rejected under 35 U.S.C. 103(a) as being unpatentable over Garbuio (US 3,925,916) in view of Smith et al. (US 5,877,100).**

14. Regarding claim 27, for convenience Table 1 as set forth below shows citation of pertinent portions of Garbuio and Smith where the steps of Applicant's claimed invention are disclosed or rendered obvious.

Step	Process limitation	Garbuio	Smith
1	Providing a boot having...and a boot sole	abstract and column 1 lines 14-16	
2	Providing a mixture comprising a porous...and aerogel		column 1 lines 58-66, column 4 lines 64-67, and column 6 lines 7-15
3	Compressing the mixture...a structure material		column 11 lines 64-65
4	Placing the structure material in a gas impermeable envelope		column 11 lines 64-65
5	Evacuating air from the envelope...form a flat insulating structure		column 1 lines 25-30, column 13 lines 1-5, and column 12 lines 30-36
6	Shaping the flat insulating...foot of a wearer	general disclosure of Garbuio	column 11 lines 5-10
7	Inserting the shaped insulating structure...of the boot	general disclosure of Garbuio	general disclosure of Smith

15. With respect to Applicant's method of insulating a boot comprising a step 1 (providing a boot having...and a boot sole), Garbuio discloses a flexible insert for a boot comprising a form-fitting liner with a core of elastomeric sheet material, wherein at least part of the core is an open-celled foam polymer in an air-impervious envelope, preferably of heat-sealable plastic (abstract). Further, Garbuio discloses that the insert liner of his invention serves as a thermal insulator (column 1 lines 15-17).

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16. As to Applicant's claimed process steps 2-5, it is noted that Garbuio does not explicitly disclose said process steps 2-5.

17. However, Smith discloses insulation bodies such as vacuum panel (column 1, lines 5-7 and lines 21-23) that have improved thermal conductivities (column 1, lines 59-60).

18. As to Applicant's claimed step 2 (providing a mixture comprising...aerogel), it is noted that the insulation body of Smith comprises a particulate composition such as aerogels, xerogels, metal oxide gels (e.g. silica and alumina) (column 1 lines 58-66, column 4 lines 64-67, and and column 6 lines 7-15).

19. With respect to Applicant's step 3 (compressing the mixture to form a structure material), at column 11 lines 64-65, Smith discloses that the particulate composition of his invention can be placed in a porous pouch and **pressed** to a desired shape prior to placement in the substantially gas impermeable and substantially water impermeable membrane enclosure.

20. With regards to Applicant's step 4 (placing the structure material in a gas impermeable envelope), Smith discloses placement of his particulate composition in a substantially gas impermeable and substantially water impermeable membrane enclosure (column 11 lines 64-65).

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21. With respect to Applicant's step 5 (evacuating air from the envelope...and sealing the envelope...flat insulating structure), Smith at column 1 lines 25-30, column 13 lines 1-5, and column 12 lines 30-36 discloses said step. Further, Smith and Applicant uses the same process step 5, thus the insulating material of Smith would necessarily be a flat insulating structure.

22. As to Applicant's step 6 (shaping the flat insulating structure...foot of a wearer), it is noted that Garbuio's thermally insulating liner is shaped to fit to a boot and it is shaped to cover the front top portion of a foot of a wearer (see Figure 1 and Figure 2 of Garbuio). Further, Smith discloses that "An insulation body of the present invention may be utilized in any structural shape designed to insulate a system" (column 11 lines 5-10). The Examiner submits that collective disclosure of Garbuio and Smith as set forth above reasonably conveys to one of ordinary skill in the art to shape the flat insulating structure from a flat structure into a shaped insulating structure as claimed by step 6 of Applicant's method, motivated by the desire to suitably form an insulating structure that can be fitted in a boot in order to insulate the boot.

23. As to Applicant's step 7 (inserting the shaped...cap area of the boot), it is noted that Garbuio's thermally insulating liner is inserted in a boot (see Figure 1).

24. With respect to claimed property of "the shaped insulating structure having a thermal conductivity of less than or equal to...at 25°C", it is reasonable to presume that



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said property is present in the invention of the insulation bodies of Smith. Because, as set forth previously Smith discloses same structure and composition of shaped insulating structure as that of claimed by Applicant. Thus, the aforementioned property would be present in the invention of Smith.

25. It is noted that the invention of Garbuio is generally related to providing insulating material. Similarly, Smith's invention is also in the field of providing insulation bodies that have improved thermal conductivity values (abstract). Further, Smith discloses that the compositions of his invention can be advantageously utilized as an insulation material to reduce heat transmission in insulation applications which include but are not limited to panels, blankets, walls, housing and the like (column 4 lines 35-45). Further, Smith discloses that the vacuum insulation structure of his invention may have any dimensions depending upon desired end use. According to Smith, the length, width, and the thickness are sufficient to substantially fill the space where it is to be utilized. However, the thickness can be as low as 3 mm (column 12 lines 40-50). Insulation bodies of Smith having such a low thickness can reasonably be used in the invention of Garbuio as a flexible insert, because Smith's insulation bodies provide excellent insulation.

26. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the insulation bodies of Smith in the invention of Garbuio, motivated by the desire to provide excellent insulation to ski boots of Garbuio.

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27. Regarding claims 28 and 29, the insert of Garbuio is between the inner and outer layers of the boot, and it is affixed to an inner boot layer (see Figure 1).

28. With respect to claim 36, it is noted that Garbuio discloses that the foot-fitting insert (thermal insulator) to be received in the boot as a permanent or removable liner (column 1 lines 5-10). In absence of any unexpected results, it would have been obvious to shape the flat insulating structure in any shape including that of the presently claimed invention, motivated by the desire to use said insulating structure in shoes to provide adequate thermal insulation.

29. With respect to claims 38 and 39, Smith discloses that the bag (i.e. gas impermeable barrier) is first evacuated to as low a pressure as desired, for example 133.2322-1,333.22 Pa (column 13, lines 1-6). Alternatively, Smith at column 1 lines 40-55 discloses that greater insulating values are achieved at vacuum levels farther beneath ambient. Therefore, it would have been obvious to keep the gas impermeable envelope under a vacuum pressure as claimed, motivated by the desire to achieve greater insulation.

30. Regarding claims 44 and 45, in absence of unexpected results selecting a suitable thickness of the flat insulating structure it would have been obvious, motivated by the desire to use such an insulating structure to insulate a boot.

***Response to Arguments***

31. Applicant's arguments received on 08/13/09 have been considered but are moot in view of the new ground(s) of rejection.

32. On page 8 of the amendment, applicant argues following:

**Rejections under 35 USC §103(a)**

Claims 27-32 and 36-47 are rejected under 35 USC §103(a) as being unpatentable over Garbuio (US 3,925,916, hereinafter '916) in view of Smith et al. (US 5,877,100, hereinafter after '100). Applicant respectfully traverses the rejection.

The Office Action sets forth a table showing citations of what are deemed as pertinent portions of the references where the steps of Applicant's claimed methods are deemed disclosed or obvious. To summarize the table, '916 discloses a boot having an insulating structure that is contained within an envelope. However, '916 does not disclose the following claim elements

- (1) insulation mixture;
- (2) compressing the insulation mixture;
- (3) placing compressed insulation mixture into the envelope;
- (4) evacuating and sealing the envelope at reduced pressure;
- (5) shaping the flat sealed evacuated insulating structure to form a shaped structure;
- (6) the shaped insulating structure having the claimed thermal conductivity;  
and
- (7) inserting a sealed shaped evacuated insulating structure into a boot.

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33. The Examiner respectfully disagrees. It is respectfully submitted that while Garbuio ('916) does not disclose all of the aforementioned elements, Smith et al. ('100) in combination with '916 is relied upon to render obvious the aforementioned elements.

34. Specifically, with respect to element 1, this is disclosed by '100 in abstract and at column 4 lines 38-45. As to claim element 2, this is disclosed by '100 at column 11 lines 64-65. With respect to element 3, this is disclosed by '100 at column 11 lines 64-65. With respect to claim element 4, this is disclosed by '100 at column 1 lines 25-30, column 13 lines 1-5, and column 12 lines 30-36.

35. As to elements 5 and 7, as set forth in section 16 of the previous Office action, it is noted that '916 discloses that the thermally insulating liner is shaped to fit to a boot and it is shaped to cover the front top portion of a foot of a wearer (Figure 1 and 2). The prior art of '100 discloses "an insulating body of the present invention may be utilized in any structural shape designed to insulate a system" (column 11 lines 5-10). Thus, the collective disclosure of '916 and '100 would convey to one of ordinary skill in the art to shape the flat insulating structure to form a shaped structure, motivated by the desire to form an insulating structure that can be fitted in a boot in order to insulate said boot.

36. With respect to element 6, as stated previously in section 18 of the previous Office action, it is reasonable to presume that the claimed thermal conductivity is necessarily present in the insulation bodies of '100. Because, as set forth in this and previous Office action, '100 discloses same structure and composition of shaped insulating structure as that of claimed by Applicant in claim 27.

37. On page 9 of applicant's amendment, applicant argues "To modify '916 by substituting a thermally insulating vacuum panel of '100 for the flexible sheet material of '916 would change the essential features of '916 from mechanical protection to thermal insulation." Additionally applicant argues "Substituting the resilient sheet of '916 with the compressed, evacuated structure of '100...Thus one skilled in the art would have no motivation to substitute the...which are not known to be resilient, and '916 teaches away from this modification."

38. The Examiner respectfully disagrees. It is submitted that contrary to applicant's assertion, the foot-fitting insert liner of '916 serves as a thermal insulator (see column 1 lines 15-16). Thus, '916 clearly desire thermal insulation. While applicant argues that the thermal insulation material of '100 would render '916 unsuitable for its purpose, there is no evidence to support this position and they are just attorney arguments. Also, while there is no explicit disclosure in '100 that the material is resilient, given that the thermal insulation of '100 is made from same material and by same process as used in the present invention which is suitable for use in shoes, it would appear that such thermal insulation would have intrinsically possess the resiliency necessary to be suitable for use in '916.

39. With respect to applicant's assertion on page 10 of the amendment that "Prior to the instant application it was not thought possible to make compressed insulating in an evacuated sealed envelope having sufficient flexibility for shaping into a shaped form to

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provide the insulating advantages to apparel applications", these assertion is not found persuasive because there is no factual evidence on the record to support this assertion.

40. Additionally, on page 10 of the amendment, applicant states "Rejections on obviousness grounds cannot be sustained by mere conclusory statements, instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

41. The Examiner submits that that the rational for combining '916 and '100 is provided on page 6, section 19 of the previous Office action. Specifically, it is noted that the invention of Garbuio is generally related to providing insulating material. Similarly, Smith's invention is also in the field of providing insulation bodies that have improved thermal conductivity values (abstract). Further, Smith discloses that the compositions of his invention can be advantageously utilized as an insulation material to reduce heat transmission in insulation applications which include but are not limited to panels, blankets, walls, housing and the like (column 4 lines 35-45). Further, Smith discloses that the vacuum insulation structure of his invention may have any dimensions depending upon desired end use. According to Smith, the length, width, and the thickness are sufficient to substantially fill the space where it is to be utilized. However, the thickness can be as low as 3 mm (column 12 lines 40-50). Insulation bodies of Smith having such a low thickness can reasonably be used in the invention of Garbuio as a flexible insert, because Smith's insulation bodies provide excellent insulation.

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42. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the insulation bodies of Smith in the invention of Garbuio, motivated by the desire to provide excellent insulation to ski boots of Garbuio.

43. On pages 10-11 of applicant's amendment (under heading "All Elements of Independent Claim 1 [it should be Claim 27] Have Not Been Established by the Combination"), applicant argues that neither reference teach "evacuating, air from the envelope and sealing it to form a flat insulating structure and then, shaping the flat insulating structure into the form of a shaped insulating structure.". Additionally, Applicant argues that in '100, shaping takes place prior to evacuation and prior to forming a vacuum panel.

44. In response, the Examiner submits that at column 11 lines 57-60 '100 discloses a method step "A vacuum insulating panel embodiment of the present invention may be produced by placing a particulate composition of the present invention within a substantially gas impermeable barrier enclosure then evacuating and sealing the enclosure." Additionally, at column 13 lines 1-5 the prior art of '100 discloses that the bag is first evacuated at low pressure. Since '100 and applicant both use same process step (i.e. evacuating air from the envelope at a reduced pressure, and sealing the envelope to form a flat insulating structure), it is clear that a flat insulating structure would result from the aforementioned method step of '100.

45. As to the shaping the flat insulating structure into the form of a shaped insulating structure, it is submitted that '916 discloses that the thermally insulating liner is shaped to fit to a boot and it is shaped to cover the front top portion of a foot of a wearer (see Figure 1 and Figure 2 of '916). Further, '100 disclose that "An insulation body of the present invention may be utilized in any structural shape designed to insulate a system" (column 11 lines 5-10). The Examiner submits that collective disclosure of '916 and '100 as set forth above reasonably conveys to one of ordinary skill in the art to shape the flat insulating structure from a flat structure into a shaped insulating structure as claimed by step 6 of Applicant's method, motivated by the desire to suitably form an insulating structure that can be fitted in a boot in order to insulate the boot.

46. Based on above, applicant's arguments are not found persuasive and the art rejections are sustained.

### ***Conclusion***

47. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

48. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any



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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

49. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANISH DESAI whose telephone number is (571)272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

50. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

51. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. D./  
Examiner, Art Unit 1794

/Callie E. Shosho/  
Supervisory Patent Examiner, Art Unit 1794